E7.3 10520
CR-131487

TYPE I PROGRESS REPORT
For Period Ending
4/16/73

A. A study to explore the use of orbital remote sensing to determine native arid plant distribution. MMC #250

B. GSFC # UN 613

C. Problems: None

D. Accomplishments during the reporting period:

1.. Yuma - Quartzsite area ground truth survey

Ground truth data for the Yuma - Quartzsite area were obtained on March 24-March 26, 1973. Observations were made on the distribution of the major perennial species and on the distribution of spring annuals. Extensive use was made of 35 mm color and color infrared photography, taken from the ground and from a low platform. Frames of 9.5 in. color infrared photography of NASA/ARC Flight 73-016 were also used extensively in the field. The aircraft photographs were consulted to determine whether ground truth sites were located in representative areas. Preliminary analysis of ERTS imagery, high-altitude photography and ground truth data suggests that large areas of "desert pavement" in the area may be mappable on ERTS imagery.

2. Determination of spectral signatures from ERTS data and ground truth measurements

Plans for obtaining the necessary radiometric and densitometric data for this procedure are being made. A dark calibration area was located on ERTS imagery, checked on high-altitude aircraft photography (ERAP Mission 101) and on the ground. The area appears to be suitable for a dark calibration area using the method for determining spectral signatures from ERTS data which was described in the Type II Progress Report for the period ending 2/16/73.

3. Avra Valley ground truth sites

Radiometric data were obtained at eight Avra Valley ground truth sites using an Exotech ERTS Radiometer provided by the Office of Arid Lands Studies. This instrument was purchased by EROS for use in the Arizona Regional Ecological Test Site. Measurements of reflected radiation were obtained for the same scenes which have been photographed repeatedly over the last several months, and measurements of incoming

radiation were made so that the radiance values could be converted to reflectance. A complete set of 35 mm color and color infrared photographs were taken for the test area.

Accomplishments Planned:

1. Photography and radiometry at the Avra Valley ground truth sites will be continued. The use of a light plane for obtaining ground truth imagery of the arboreal and shrub communities will be explored, since it is sometimes difficult to obtain useful ground truth imagery of these communities from a low platform.

2. We will continue to analyze Yuma - Quartzsite area ERTS imagery, using recently acquired ground truth data and high-altitude photography as aids in interpretation.

3. Plans and arrangements for obtaining radiometric and densitometric data on two calibration sites in the Tucson area will be made. Such data will be used to determine a correction factor which would convert radiance values on an ERTS image to reflectance values (as described in Type II Progress Report for period ending 2/16/73).

E. Significant Results: None

F. Publication and Reports: None

G. Recommendations: None

H. Changes in Standing Order Forms:
4/14/74 - Addition
(1 copy attached)

I. ERTS Image Descriptor Forms: see attached form

J. Data Request Forms: None

K. Other Information: None

ERTS 1 STANDING ORDER FORM

(See Instructions on Back)

DATE 4/4/73

GSFC ID NUMBER UN 613

PRINCIPAL INVESTIGATOR William G. McGinnies

TELEPHONE NO. (602) 884-1955 ☐ NEW

SHIP TO: William G. McGinnies
(NAME)
Office of Arid Lands Studies
(AGENCY)
U. of Arizona, 1201 E. Speedway
(STREET)
Tucson (CITY) Arizona (STATE) 85719 (ZIP)

☒ ADDITION
☐ CHANGE
☐ DELETION

CATALOGS DESIRED
STANDARD ☐ U.S. ☐ NON-U.S.
DCS ☐
MICROFILM ☐ U.S. ☐ NON-U.S.
☐ CHECK IF ADDRESS IS NEW

NDPF USE ONLY
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AREA NUMBER	GEOGRAPHIC POINTS		CLOUD COVER %	QUALITY	COVERAGE PERIOD		PROD		TICK MARK	QUANTITY	RBV BANDS			MSS BANDS				DELETE
	LATITUDE	LONGITUDE			START DATE	STOP DATE	TYPE	FORMAT			1	2	3	1	2	3	4	
	32° 15'N	114° 45'W	2	F	040773	063073		T		1				X	X		X	
	33° 45'N	114° 30'W																
	33° 45'N	113° 45'W																
	32° 15'N	113° 45'W																
	33° 30'N	111° 30'W	2	F	040773	063073		T		1				X	X		X	
	34° 00'N	111° 30'W																
	34° 00'N	110° 45'W																
	33° 30'N	110° 45'W																
	31° 30'N	111° 30'W	2	F	040773	063073		T		1				X	X		X	
	32° 45'N	111° 30'W																
	32° 45'N	110° 15'W																
	31° 30'N	110° 15'W																

GSFC 37-3 (7/72)

INVESTIGATOR'S COPY

ERTS IMAGE DESCRIPTOR FORM

(See Instructions on Back)

NDPF USE ONLY
D
N
ID

DATE 4/16/73

PRINCIPAL INVESTIGATOR William G. McGinnies

GSFC UN 613

ORGANIZATION Office of Arid Lands Studies, University of Arizona

PRODUCT ID (INCLUDE BAND AND PRODUCT)	FREQUENTLY USED DESCRIPTORS*			DESCRIPTORS
	Desert	Bajada	Alluvial Fan	
1069-17441-5	X	X	X	Dunes, Creosote Bush
1069-17441-7				

*FOR DESCRIPTORS WHICH WILL OCCUR FREQUENTLY, WRITE THE DESCRIPTOR TERMS IN THESE COLUMN HEADING SPACES NOW AND USE A CHECK (✓) MARK IN THE APPROPRIATE PRODUCT ID LINES. (FOR OTHER DESCRIPTORS, WRITE THE TERM UNDER THE DESCRIPTORS COLUMN).

MAIL TO ERTS USER SERVICES
CODE 563
BLDG 23 ROOM E413
NASA GSFC
GREENBELT, MD. 20771
301-982-5406

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